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Supreme Court, U.S.
FILED
NOV 7 1996
CLERK

No. 96-550

In The

Supreme Court of the United States

October Term, 1996

SIGRID CHASE, DEBORAH CLEYMAN, JUDY GORDON, SULEMA R. VILLARREAL, ELVIRA HERRERA, SUSAN JEAN PRICE, SYLVIA GARZA, individually and in their representative capacities; BARBARA KNUTSON, DAVID EDWARD PEREZ, JOSEPH MANUAL PEREZ, JOHN PAUL PEREZ, DANIEL RICHARD PEREZ, individually; and ESTHER PEREZ, as next friend and guardian of JAMES PEREZ, a minor,

Petitioners,

vs.

LOCKHEED CORPORATION and GENERAL ELECTRIC CORPORATION,

Respondents.

On Petition For Writ Of Certiorari To The United States Supreme Court

RESPONDENTS' BRIEF IN OPPOSITION

JACK O'NEILL
CLEMENTS, O'NEILL, PIERCE & NICKENS, L.L.P.
First Interstate Bank Plaza
1000 Louisiana, Suite 1800
Houston, Texas 77002-5009
(713) 654-7600

RON A. SPRAGUE*
GENDRY & SPRAGUE, P.C.
Airport Center, Suite 850
10100 Reunion Place
San Antonio, Texas
78216-4101
(210) 349-0511

Counsel for Respondents
**Counsel of Record*

COCKLE LAW BRIEF PRINTING CO., (800) 225-6964
OR CALL COLLECT (402) 342-2831

71pp

QUESTIONS PRESENTED

I. WHETHER THE FIFTH CIRCUIT CORRECTLY APPLIED THE GOVERNMENT CONTRACTOR DEFENSE FORMULATED IN *BOYLE V. UNITED TECHNOLOGIES*.

II. WHETHER THE "MOST SUBSTANTIAL RELATIONSHIP" CHOICE OF LAW TEST USED BY TEXAS AND FLORIDA ENSURES DUE PROCESS OF LAW SUCH THAT APPLICATION OF GEORGIA SUBSTANTIVE LAW ON LIABILITY ISSUES IN THIS CASE WAS CONSTITUTIONALLY PERMISSIBLE.

LIST OF INTERESTED PARTIES

Petitioners' List of Interested Parties is accurate except that Glynda Knutson was not a party to the proceedings in the Fifth Circuit, having previously dismissed her claims with prejudice. Petitioners' List is also incomplete having omitted the parent corporation of Lockheed Corporation, i.e., Lockheed Martin Corporation, which was included in the Certificate of Interested Parties in Appellees' Brief in the Fifth Circuit.

Respondents are correctly identified in the caption. Ron A. Sprague of Gendry & Sprague, P.C. is liaison counsel of record for both Respondents. Ron A. Sprague is also counsel for Respondent Lockheed Corporation. Jack O'Neill of Clements, O'Neill, Pierce & Nickens, L.L.P. is counsel for Respondent General Electric Company.

In accordance with Rule 29.6, Lockheed Corporation certifies that Lockheed Martin Corporation is its parent corporation and Martin Marietta Corporation is an affiliate corporation. General Electric Company certifies that it has three non-wholly owned subsidiaries, each of which has publicly held equity securities, *viz.*, CAMCO, Inc. (Canada), General Electric Capital Corporation f/k/a General Electric Credit Corporation, and Montgomery Ward & Co., Incorporated.

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RESPONDENTS' BRIEF IN OPPOSITION

Respondents respectfully request that the Court deny the Petition for Writ of Certiorari seeking review of the decision of the United States Court of Appeals for the Fifth Circuit. The Court of Appeals' opinion is reported at 81 F.3d 570 and is reproduced in the Appendix filed herewith ("App.") at App. 1-20. The Court of Appeals' amended opinion denying Appellants' Petition for Rehearing is reported at 88 F.3d 340 and reproduced at App. 21-23.

STATEMENT OF THE CASE

I.

COURSE OF PROCEEDINGS BELOW

This action arises from the August 29, 1990 crash of a U. S. Air Force C-5A Galaxy transport plane shortly after takeoff from Ramstein Air Base, Germany. Of the seventeen persons on board, thirteen received fatal injuries. One case involving representatives of the estates of six of the decedents and one surviving crewman was filed in State District Court in Bexar County, Texas. (R. 2620).[1] Six separate cases were filed on behalf of the representatives of the estates of six other decedents in State Court in Dade County, Florida.[2] Heirs of the remaining decedent,

[1] *References to the Record will be made using the abbreviation "R" and the sequential page number.*

[2] *Gordon* (R. 2880), *Herrera* (R. 3023), *Price* (R. 3149), *Villarreal* (R. 3281), *Garza* (R. 3411), and *Cleyman* (R. 3552). The allegations in all of these complaints are essentially identical.

SSgt. Rande J. Hulec, intervened in this case in February of 1994, but withdrew their intervention the following month. (R. 1287). The other three survivors never filed suit. (R. 2090). All of the state court actions were removed to Federal District Court and, by Order of June 4, 1992, transferred and consolidated by the Judicial Panel on Multidistrict Litigation for pre-trial proceedings in the Western District of Texas. (R. 0001). By subsequent Order dated January 21, 1994, the district court granted the parties' joint Motion to Transfer the trial on liability issues to the Western District of Texas. (R. 1734).

Upon Defendants' Motion, the district court determined that Georgia law properly governs the resolution of the liability issues in this case by Order dated November 23, 1993. (R. 1418). Defendants' Motion for Summary Judgment was then filed based on Georgia substantive law and the Government Contractor Defense. (R. 1271). On July 11, 1994, the district court granted, in part, Defendants' Motion for Summary Judgment, basing its ruling on Georgia law, including the ten-year Georgia statute of repose. (R. 2286). That July 11, 1994 Order dismissed all of Plaintiffs' claims except for "claims arising out of a modification and/or repair to the aircraft at issue subsequent to its delivery to the USAF" and within the ten-year repose period.

After providing all parties ample opportunity to brief their respective positions, the district court ultimately granted Defendants' Motion for Reconsideration and dismissed Plaintiffs' remaining claims when Plaintiffs failed to prove "any connection between the accident and a negligent modification or a design change made to the craft within the ten-year [repose] period." Order of

December 29, 1994. (R. 2602). Final judgment was entered on January 6, 1995. (R. 2860).

Plaintiffs appealed all aspects of the judgment entered below, as well as the district court's case management orders and choice of law rulings to the United States Court of Appeals for the Fifth Circuit.

On appeal, the Fifth Circuit affirmed on all counts. The court specifically held that (1) the application of Georgia law, including Georgia's statute of repose, was correct and appropriate under the applicable choice of law tests (App. 17-18) and (2) that the Government Contractor Defense was itself a sufficient basis for summary judgment with respect to all claims "except possibly the 'failure to warn claim.'" (App. 8). It further held that all "failure to warn claims" were defeated by applicable state law on the facts of this case. (App. 19, 22-23).

II.

STATEMENT OF FACTS

This accident involved an Air Force C-5A Galaxy aircraft, operating in support of the military buildup in Saudi Arabia codenamed "Operation Desert Shield." It was departing Ramstein Air Base, Germany en route to Rhein-Main Air Base, Germany, for maintenance. Shortly after takeoff in the early morning hours of August 29, 1990, the plane started a shallow left turn, contacted trees near the end of the runway and crashed. The plane carried a crew of ten men and seven passengers, all on active duty in the U.S. Air Force.

The cause of the accident is disputed. The only theory pled by Plaintiffs in the district court, and the only one brought forward to the Fifth Circuit, is an alleged uncommanded, unintentional deployment of a thrust reverser on one of the two engines on the left side of the aircraft. On the C-5A Galaxy aircraft, thrust reversers are used to change the direction of the thrust of the aircraft's engines and are used most often when landing the aircraft. Plaintiffs theorize that one of the thrust reversers failed in such a manner and at such a time as to allow the reverser to open shortly after takeoff without the crew being able to detect and correct the problem. They further contend that the open thrust reverser made the aircraft uncontrollable and resulted in the crash.

A brief explanation of the pertinent parts of the thrust reverser electrical system is warranted here. There are two electric circuits on each thrust reverser on the C-5A Galaxy aircraft. One circuit, the "enunciator circuit", sends electrical signals necessary to deploy or retract the thrust reversers. The second electrical circuit, the "indicator circuit", is used to illuminate indicator lights in the cockpit to provide the crew with visual signals concerning the status of the thrust reverser. Both of these circuits, like all electric circuits, have ground wires. On the C-5A Galaxy, the ground wires for both the enunciator circuit and the indicator circuit for each individual thrust reverser are bundled into a wiring harness that terminates at the male end of a "cannon plug." When the engines and thrust reversers are mounted onto the aircraft, the thrust reverser electrical system is connected to the aircraft's electrical system by "plugging it in" at a suitable connector on the pylon. Within the pylon, wires

providing the necessary continuity from the cannon plug are grounded by physical attachment to a single ground stud on a ground bus bar mounted on the airframe itself. Plaintiffs' theory of causation contends that one of these single ground studs "failed," thus simultaneously disabling both the enunciator and indicator circuits for the affected thrust reverser.[3]

In contrast, LOCKHEED brought forth evidence that the accident was most likely caused by crew inattention. (R. 0980). The flight had been delayed for over eight hours because of various maintenance problems. The departure time had slipped to just after midnight. The crew had been on the aircraft for many hours. The mission had been changed from a flight "down range" to Saudi Arabia to a simple ferry flight to another air base a short distance away. There were no lights on the departure horizon and the crew had no visual references to fly by after takeoff. The pilot was preoccupied with power adjustments during the takeoff roll and initial climb. The aircraft entered a slight left bank almost immediately upon liftoff and no corrective action was taken by the

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[3] Petitioners' complaints and discovery responses all initially alleged that the ground stud on the Number 1 Engine Pylon failed and caused the accident. However, LOCKHEED's investigation successfully retrieved the section of pylon containing this ground stud from among the aircraft wreckage in Germany and brought it back to the United States for testing. That testing showed that the ground stud functioned as designed, even after the crash. (R. 173). Petitioners then changed their theory to allege a failure of the Number 2 Engine ground stud which was never recovered from the wreckage.

crew. In fact, there was no indication that the crew recognized that the aircraft was not climbing properly or that it had begun the banking left turn until just before it struck a stand of pine trees near the departure end of the runway. The plane was airborne for about seventeen seconds before it crashed. Computer simulations confirmed that an inadvertent input of approximately seven degrees of turn on the control yoke, if left uncorrected, would result in the banking left turn experienced by this plane on its last flight.

The C-5A Galaxy transport plane was designed and manufactured by Lockheed Aeronautical Systems Company, a division of LOCKHEED. It is one of the world's largest aircraft. Physically, the C-5A is 247.8 feet long and has a wing span of 222.8 feet. It is powered by four TF39-GE-1C turbo fan engines, manufactured by GENERAL ELECTRIC and rated at 43,000 pounds of thrust each. Its cargo hold is 19 feet wide, 13.5 feet high, and 144.6 feet long. Without refueling, the C-5A can airlift 76.5 tons of men, women and supplies for 5,000 nautical miles. With its air refueling capability, it has worldwide range. It is indeed a technological marvel. (Affidavit of O. V. Braun, hereinafter "Braun"; R. 1287-1302; App. 24-37).[4]

The C-5A Galaxy was designed and manufactured under a contract with the United States Air Force. The contract required LOCKHEED, as prime contractor, to work closely with, and under the surveyance of, Air Force engineers and systems management specialists in

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[4] Mr. Braun was LOCKHEED's Manager of Military Contracts.

the course of developing the aircraft. All subcontractors to LOCKHEED worked under the same governmental supervision. *The C-5A, and its* component parts, were built in accordance with detailed specifications approved by the U. S. Air Force. (Braun; R. 1292-1301).

The procurement process for the C-5A was initiated by the United States Air Force on October 14, 1964, when it issued a Request for Proposal for the Long Range Heavy Logistical Transport System 410A. (Braun; R. 1290). After more than three years of development and testing, all under government supervision, the first C-5A was "rolled out" on March 2, 1968, at the LOCKHEED plant at Marietta, Georgia. (Affidavit of Carl Weaver, hereinafter "Weaver"; R. 1304; App. 38-40).[5] The first flight took place later that year. Testing of the aircraft continued in accordance with the contract. The C-5A Galaxy involved in this case was delivered on January 9, 1971. (Braun; R. 1296).

All C-5As, including the accident aircraft, were sold by LOCKHEED to the United States Air Force and delivered in Marietta, Georgia. LOCKHEED currently employs approximately 12,000 people at their Marietta, Georgia plant and has been in continual operation there, in one form or another, since 1951. It still manufactures and designs aircraft there, primarily for the United States' military forces. (Weaver; R. 1303; App. 38-39).

From time to time, LOCKHEED has made recommendations to and received recommendations from the Air

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[5] Mr. Weaver was LOCKHEED's C-5 Engineering Program Manager when his Affidavit was prepared in this case, March 10, 1993.

Force relating to design changes on the C-5A aircraft and/or its components. When LOCKHEED made recommendations concerning design changes, it was required to submit an Engineering Change Proposal (ECP) to the Air Force. The Air Force accepted some ECP's and disapproved others. No change to the design of the aircraft or its components could be made by LOCKHEED without United States Air Force approval. (Braun; R. 1299-1300; Depo of Henry Fraser, hereinafter "Fraser", Second Supplemental Record, p. 11).[6]

Of particular relevance to this case is one such Engineering Change Proposal, ECP 7054. Plaintiffs' sole theory of causation in this case involves a grounding stud that was relocated during a modification of the aircraft performed pursuant to ECP 7054. As was noted both by the district court and Fifth Circuit, the relocation of the ground stud did not modify the original configuration of the circuit. The same wires were terminated to the same ground stud both before and after the ECP 7054 modification. However, and more importantly, the modifications made pursuant to ECP 7054 were reviewed in great detail by U.S. Air Force engineers and approved by them prior to installation on any C-5A aircraft, including the one in question. Air Force engineers had full knowledge of the system, including the fact that both wires for the thrust reverser system terminated at a single ground stud. (Fraser; S.S.R. 66-67).

The history of ECP 7054 begins in 1978 when Air Force engineers sought to improve the maintainability of

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[6] Further references to the Second Supplemental Record will be made with the abbreviation "S.S.R."

the pylons on the C-5A fleet. (Fraser; S.S.R. 19-23). They turned to LOCKHEED and asked it to make a proposal concerning configuration changes in the hydraulic, electrical and fuel systems in the pylons to maximize the separation of flammable substances from ignition sources. That request was made by Mr. Henry Fraser, Chief of C-5 Engineering and Reliability Branch of the Air Force's San Antonio Air Logistics Center. His office was responsible for evaluating and approving all such design changes on the C-5A aircraft. LOCKHEED made several proposals and, through a detailed process of interaction with the Air Force engineers, developed and submitted ECP 7054. The Air Force studied LOCKHEED's proposal and conducted a "kit proofing" on a prototype kit. During that "kit proofing," Air Force technicians installed the proposed kit on a C-5A Galaxy to test each component for fit and function. LOCKHEED provided engineering support to the Air Force during the "kit proofing," but the review was conducted by Mr. Fraser's department and under his supervision. (Fraser; S.S.R. 55).

As a result of the "kit proofing" and their study of the proposed design changes, the Air Force approved ECP 7054, contracted with LOCKHEED to manufacture the kits, and ordered that all C-5A Galaxies be retrofitted. That work was done by Air Force technicians or contractors other than LOCKHEED and GE.[7] All of the pylons on the accident aircraft had been so modified.

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[7] In fact, GENERAL ELECTRIC did not participate at all in ECP 7054.

All of the ECP 7054 kits were manufactured by LOCKHEED in its Marietta, Georgia plant. They were all inspected by Air Force Plant Representatives, accepted and delivered to the Air Force in Marietta, Georgia. From there, the Air Force shipped them to wherever they were to be utilized.

C-5A Galaxy aircraft are operated by the United States Air Force, Air Force Reserves, and Air National Guard. In fact, these are the only entities ever to have operated the C-5A Galaxy. Accordingly, the Air Force is the most knowledgeable organization regarding the aircraft's operations. Moreover, the Air Force and its Reserve components are solely responsible for the maintenance of the C-5A fleet. The Air Force was made aware of any risks inherent in the aircraft that were known to LOCKHEED or GENERAL ELECTRIC during design of the C-5A Galaxy and its thrust reverser systems. In fact, LOCKHEED and GENERAL ELECTRIC went to great lengths to identify and evaluate potential hazards. Documents of the extensive tests and analyses conducted were submitted in the form of engineering reports to the Air Force. After 20 years of service experience, neither LOCKHEED nor GENERAL ELECTRIC is aware of a danger in the design of the aircraft which was not known by the Air Force at the time it approved the design or which did not become known to the Air Force during its operation of the aircraft prior to the accident. (Braun; R. 1300). With regard to the kits installed pursuant to ECP 7054, the Air Force had complete knowledge of every component involved, including specifically the fact that the two electrical ground wires for each thrust reverser systems were terminated to a single ground stud. Any

"constructive knowledge" of a risk involved with that design was also known to the Air Force prior to the accident of August 29, 1990.

III.

CORRECTION OF MISSTATEMENTS IN THE PETITION

Petitioners have made numerous misstatements in the petition involving facts, evidence and the decisions of the lower courts. Although it is not practical to correct every misstatement, pursuant to United States Supreme Court Rule 15.2, Respondents bring the following misstatements to the Court's attention.

Petitioners misrepresent the nature of the mission on which the accident aircraft was embarked by claiming it was being used in support of the Persian Gulf War's Operation Desert Storm. The accident actually occurred during the military buildup preceding the outbreak of hostilities in the Persian Gulf. Therefore, the mission was part of Operation Desert Shield. (Petition, p. 3)

Petitioners also misrepresent the evidence they presented on the issue of causation. (Petition, p. 4) No witness ever testified, by affidavit, deposition or otherwise, that a single point electrical failure on takeoff led to an inadvertent deployment of a thrust reverser. The only evidence submitted by Petitioners on the issue of causation was several theories of Mr. Oddvar Olav Bendiksen, a doctor of philosophy and aeronautical engineer, that listed seven "probable primary failure modes." (*See*, R. 2453-2454). One of those hypothetical failure modes was described by Mr. Bendiksen as "the single point ground

fault at the pylon busbar." Mr. Bendiksen defined "probable primary failure mode" in his deposition as something "that you cannot rule out because you have absolute evidence to the contrary . . . It doesn't mean it's a likely thing, but it's something that could happen." (Bendiksen depo., p. 122). Even more telling is the fact that Mr. Bendiksen later testified by affidavit that, in his opinion, "the most probable failure mode involved a sudden *powered extension* of the No. 2 thrust reverser shortly after liftoff." His final conclusion, therefore, precluded the possibility of a ground fault, (*See*, R. 2586) contradicted his prior testimony, and, most importantly, is completely contrary to the "facts" represented to this Court in the Petition for Certiorari.

Petitioners also misrepresent that the "single ground" design of the thrust reverser electrical system in the C-5A pylons did not comply with the government approved design specifications, (Petition, p. 7-8) that LOCKHEED altered GENERAL ELECTRIC's design, (Petition, p. 4-5) and that the Air Force first learned of the design after the accident in question. (Petition, p. 5) In actuality, the fact that the wiring design complied with specifications provided or approved by the Air Force was unrebutted. Even the testimony of the GENERAL ELECTRIC witnesses presented by Petitioners in the Appendix to their Petition, at page App. 35-43, shows that those witnesses were talking about a different part of the aircraft's electrical system. GENERAL ELECTRIC did, in fact, design the wiring on the thrust reverser components such that separate ground wires for the enunciators and the indicator lights existed. Those wires were bundled into a wiring harness and terminated on separate pins in

the wiring harness connector. GENERAL ELECTRIC's design was in full compliance with government approved design specifications and was never changed. LOCKHEED mated the connector from the thrust reverser wiring harness with the aircraft's electrical system, including its various grounding bus bars, through a plug on the forward bulkhead of the pylon, when the engines and thrust reversers were mounted on the aircraft. No GENERAL ELECTRIC employee or Air Force representative ever testified that he was critical of the design of the pylon wiring for the thrust reverser circuits and GENERAL ELECTRIC's witnesses never testified that LOCKHEED's design for the ground bus bar violated Air Force specifications, as claimed by Petitioners. Petitioners are, in fact, confusing the design of the thrust reverser component wiring, which by its physical configuration required two wires, with the pylon electrical system, which properly grounded both circuits to a single ground stud.

In Petitioners' Appendix, at App. 36, Mr. Young explained to Petitioner's counsel that he was not qualified nor in a position to give an opinion on whether or not the wiring design in question created a potential for a "single point failure" as follows:

> "I have already stated that I am not an electrical engineer. I have . . . no background that I can consider myself to be an expert in critiquing whether or not you run two wires to the same pin or not . . . I just don't feel that I'm in a position to be an expert witness to comment on that. I am not familiar with aircraft wiring,

> and design practices, and military specifications, and those things . . . "

He added at Petitioners' App. 39-40:

> "As I've stated, I really have no expert opinion to say that a single point with two separate wires going into it does or does not constitute a single point failure."

Indeed, the Air Force did not "split the common ground" in the pylon wiring system even after their system review following this accident. Similarly, the evidence was unrebutted that the Air Force knew of the single ground stud design in the pylon all along, especially following the ECP 7054 modification. (Fraser, S.S.R. 43-44)

Petitioners mischaracterize the nature of Specification 41060 and its relevance to the Government Contractor Defense. They describe that specification as "detailed and quantitative", when it actually was neither. Instead, it set forth general design criteria that the Air Force wanted the C-5A to meet. Regardless of how Specification 41060 is characterized, however, the relevant evidence on the Government Contractor Defense is that the Air Force knew the *exact* details of how the C-5A wiring system was actually designed and manufactured. The evidence was unrebutted that the Air Force approved the design originally and again when the ECP 7054 modifications were reviewed. Nothing in the Fifth Circuit's opinion was unusual or unique regarding what constitutes Government approval under *Boyle v. United Technologies Corp.*, 487 U.S. 500, 108 S. Ct. 2510, 101 L. Ed. 2d 442 (1988). There is no justification here for granting certiorari, given the undeniable fact that the Air Force approved the design of the wiring as installed on the aircraft whether

or not Petitioners think that design might have been inconsistent with Specification 41060.

Petitioners further misstate the facts relating to the choice of law determination. (Petition, p. 6) Some of the plaintiffs below and some of the decedents were Texas domiciliaries, some were not. While LOCKHEED and GENERAL ELECTRIC have done business in Texas, only a small part of that business relates to the C-5A Galaxy and none of the design, manufacturing or delivery activities for the aircraft in question or the ECP 7054 kits occurred in Texas. Specifically, the ECP 7054 kits were not delivered to the Air Force in Texas as stated by Petitioners. The Air Force accepted delivery of those kits in Georgia. (R. 1421)

Petitioners grossly mischaracterize the Fifth Circuit's holding regarding the Government's approval of reasonably precise design specifications for the C-5A Galaxy. Petitioners claim the Fifth Circuit's opinion

> "appears to immunize a contractor from liability under state law upon mere proof that the United States had significant involvement with the development of a particular product in general, or that a governmental employee came to know of a product's physical configuration."

Petition, p. 11.

In fact, the Fifth Circuit was very clear on this issue. Its actual holding in that regard was set forth as follows:

> "The Air Force was at all relevant times, and still is, closely involved in the design, manufacture and maintenance of the C-5A. *The Air Force directly participated in the design of nearly every part of the aircraft.* In the instances where the Air

> Force was not directly involved, it approved designs after reviewing them in detail . . . "

(App. 4, emphasis added).

As for Petitioners' reference to "a governmental employee" who "came to know of a product's physical configuration," this Court should note that the employee who came to know of the design configuration for the ground studs incorporated into ECP 7054 was Mr. Henry Fraser, the Air Force's Chief of C-5A Engineering and Reliability.

It should also be noted by this Court, as it was by the Fifth Circuit, (*See*, App. 12-13), that the "highly specific" evidence proving that "Air Force inspectors were present and actively involved throughout the design, review, development and testing of the C-5A" was unrebutted. (App. 12-13).

Finally, Petitioners misrepresent what they call a "perverse twist of irony" by claiming that Georgia would not have applied its own law had these cases been filed in Georgia instead of Texas and Florida. Respondents concede that Georgia's choice of law rule is *"lex loci delecti,"* and that Georgia would normally apply the law of the place of the plane crash, even where the primary negligent conduct took place in Georgia. *Risdon Enterprises, Inc. v. Colemill Enterprises, Inc.*, 324 S.E.2d 738 (Ga. App. 1984). However, it is far from clear whether Georgia courts would have applied German law in this case pursuant to that rule or opted to use its public policy exception as set forth in *Baltimore Football Club, Inc. v. Lockheed*, 525 F. Supp. 1206 (N.D. Ga. 1981). There the Court noted:

> While Georgia courts do not follow the 'most significant relationship test' . . . there is some

> room for policy considerations in a conflict of laws decision. Georgia courts will not enforce foreign statutory law in a tort action where the foreign law is contrary to Georgia public policy.

Id. at 1209. [citations omitted]; *See,* also *Alexander v. General Motors Corp.,* 466 S.E.2d 607 (Ga. App. 1995).

Georgia's public policy in the area of products liability is embodied in its statute O.C.G.A. § 51-1-11. Those policies differ greatly from the laws of the Republic of Germany, where this accident occurred. *See, Melton v. Borg-Warner Corp.,* 467 F. Supp. 983, 985 (W.D. Tex. 1979) (no theory of strict liability under German law). Would a Georgia court considering this case have applied German substantive law to hold a Georgia manufacturer liable to out-of-state Plaintiffs suing under the Texas Wrongful Death Act? The answer is certainly not as clear as Plaintiffs would have one believe. The one thing that is clear is that Georgia certainly would not have applied Texas law.

Perhaps the real "perverse twist of irony" is that Petitioners could have argued for German law to apply in lieu of Georgia law had they filed this case in Georgia. While Respondents doubt it would have made any difference, Petitioners essentially waived that option by filing in Texas and Florida where the "most substantial relationship" test applied and mandated use of Georgia law. It really makes no difference what a Georgia court might have done with this case, Petitioners opted not to travel that road.

REASONS FOR DENYING THE WRIT

I.

THERE IS NO CONFLICT BETWEEN THE FIFTH CIRCUIT'S DECISION AND THIS COURT'S FORMULATION OF THE *BOYLE* GOVERNMENT CONTRACTOR DEFENSE

Petitioners argue essentially that the Fifth Circuit Court of Appeals misapplied a properly stated rule of law. *See*, Supreme Court Rule 10, last sentence. To the contrary, however, the opinion below faithfully applied the elements of the Government Contractor Defense as set forth in *Boyle v. United Technologies Corp.*, 487 U.S. 500, 108 S. Ct. 2510, 101 L. Ed. 2d 442 (1988). It found, based on uncontroverted evidence, that the Air Force inspected and supervised every aspect of the production of the C-5A. (App. 10-11). Referring to *Stout v. Borg-Warner Corp.*, 933 F.2d 331 (5th Cir. 1991), *Trevino v. General Dynamics Corp.*, 865 F.2d 1474 (5th Cir. 1989), *Kleemann v. McDonnell Douglas Corp.*, 890 F.2d 698 (4th Cir. 1989), and *Harduvel v. General Dynamics Corp.*, 878 F.2d 1311 (11th Cir. 1989), the Fifth Circuit held that:

> "In this case, the Air Force's substantive review, evaluation and testing of the C-5A clearly implicates the Government's discretionary function and approval of reasonably precise specifications."

(App. 10).

The Court below also ruled that Defendants' evidence, including highly specific information about the actual development of the C-5A, and testimony showing that the Air Force accepted and used the C-5A for over

twenty years, supported the district court's conclusion that the aircraft was built in accordance with Air Force specifications. (App. 11-12). *See, Smith v. Xerox Corp.*, 866 F.2d 135, 138 (5th Cir. 1989).

The Fifth Circuit again relied on unrebutted affidavits and exhibits presented to the district court in finding that "the Air Force was aware of any safety implications created by the design of the electrical circuit." (App. 13).

Significantly, the Court noted:

> "The plaintiffs did not come forward, as is their burden on summary judgment, with any evidence to create a triable issue of material fact. Therefore, the defendants are entitled to the government contractor immunity defense."

(App. 13).

Petitioners are frankly correct that the defense formulated in *Boyle* does not shield a supplier of military equipment from liability where the Government did not substantively evaluate the design in question. However, that is not this case. Petitioners refuse to accept the fact that, in this case, the Government not only approved reasonably precise design specifications as required by *Boyle*, the Air Force also studied, approved and installed the ECP 7054 kits reincorporating the alleged "defect" into the C-5A pylons. Similarly, while it is true that, under *Boyle*, the product must comply with the approved specifications, in this case the evidence was unrebutted that the C-5A did comply. The evidence below was clear and unambiguous that the specific electrical design on the accident aircraft was the same design approved by

the Air Force, both initially and during the ECP 7054 modification. The Air Force's knowledge was of the system as designed and installed. There was no alteration of either GENERAL ELECTRIC's wiring design for the thrust reverser components or for the design of the pylon wiring circuits which mated to it. The Air Force's chief engineer testified, regarding those components as installed during the ECP 7054 modification, that "his people" (i.e., his engineering staff) and the Air Force technicians who installed the kits knew where each of the wires terminated and where they went. (Fraser, S.S.R. p. 66-67)

II.

ALL OF THE PETITIONERS' CLAIMS WERE DEFEATED BY APPLICABLE STATE LAW; THE PROPER APPLICATION OF THE GOVERNMENT CONTRACTOR DEFENSE WAS MERELY AN ADDITIONAL GROUND FOR UPHOLDING THE DISTRICT COURT'S JUDGMENT

While the Fifth Circuit properly and appropriately applied the Government Contractor Defense in this case, it did so only as a second ground for upholding the district court's judgment. The primary ground was the fact that those claims were all defeated by applicable Georgia state law. The results under Georgia law are not challenged by Petitioners here, nor do they directly challenge the factual determination that Georgia had the "most substantial relationship" to the liability issues in this case. Petitioners' sole complaint to this Court is that they have been denied due process by the use of Georgia's substantive law. That complaint is without merit as discussed below.

The Georgia statute of repose bars all of Petitioners' claims for strict liability and negligence because the C-5A in question was "first sold" over ten years prior to the filing of this suit. (App. 6). All breach of warranty claims are defeated by the lack of privity between the Petitioners and the Respondents. (App. 7). Allegations of willful, wanton and reckless misconduct were dismissed because no evidence to support such theories was presented. (App. 7). The "failure to warn" claims were properly dismissed because the manufacturers had no duty to warn the servicemen and women on the accident aircraft because the Air Force already knew of any risks and was a "learned intermediary" under applicable Georgia law. (App. 22-23).

III.

THE "MOST SUBSTANTIAL RELATIONSHIP" TEST ENSURES DUE PROCESS IN CHOICE OF LAW MATTERS

Application of Georgia law was fair, correct and constitutional such that Petitioners were not denied due process. Petitioners raised the allegation that the application of Georgia law in this case would be unconstitutional for the first time on appeal to the Fifth Circuit. Having failed to raise the point to the district court, Petitioners waived it. *See*, e.g. *Topolian v. Ehrman*, 954 F.2d 1125 (5th Cir. 1992), *cert. denied* 113 S. Ct. 82 (1992). Although mindful that its choice of law determinations were subject to constitutional constraints, the Fifth Circuit did not even bother to discuss Petitioners' cries of "Unconstitutional!" (*See*, App. 16). In fact, the authorities cited to this Court by Petitioners, including this Court's relatively recent

decisions in *Phillips Petroleum Co. v. Shutts*, 472 U.S. 797, 105 S. Ct. 2965, 86 L. Ed.2d 628 (1985) and *Allstate Ins. Co. v. Hague*, 449 U.S. 302, 101 S. Ct. 633, 66 L. Ed.2d 521 (1981), demonstrate the constitutionality of the "most substantial relationship test" and belie Petitioners' arguments to the contrary.

The holding in *Allstate Ins. Co. v. Hague* and its progeny, including *Phillips*, is simple:

> For a State's substantive law to be selected in a constitutionally permissible manner, that State must have a significant contact or significant aggregation of contacts, creating state interests, such that the choice of its law is neither arbitrary nor fundamentally unfair.

Allstate Ins. Co., 449 U.S. at 312-13.

Indeed, when one considers the holdings of the Supreme Court in this area, one realizes that the "most significant relationship" test automatically provides the requisite guarantees under due process. The state with the "most significant relationship" to an issue in litigation will always have "a significant contact" creating "state interests" such that application of its law will not be "arbitrary nor fundamentally unfair." The Fifth Circuit obviously understood that relationship.

The "most significant relationship" analysis in this case undoubtably calls for application of Georgia law. The entire C-5A project was centered in Georgia, including the relationships between GENERAL ELECTRIC, LOCKHEED and the Air Force. Both the C-5A Galaxy and the ECP 7054 kits were designed, manufactured and

placed in the stream of commerce in Georgia. The Fifth Circuit summarized the analysis as follows:

> "Virtually all of the relevant conduct complained of took place in Georgia . . . Georgia thus has the strongest interest in applying its law to businesses that design, manufacture and sell products into its stream of commerce . . . Because both the case law and the Restatement instruct us to place more emphasis on the place of the alleged misconduct, than on the residential preferences of scattered plaintiffs, the district court correctly concluded that Georgia law should apply.

App. 17-18.

Since Georgia has the most substantial relationship to the liability issues in this case, and a clearly expressed state interest in regards to that relationship as codified in O.C.G.A. § 51-1-11, especially given the fact that Petitioners voluntarily filed suit in forums relying on the "most substantial relationship" choice of law test, application of Georgia law cannot be said to be arbitrary or fundamentally unfair. It was undoubtably constitutional.

IV.

NO REVIEW OF "LEGISLATIVE JURISDICTION" IS NECESSARY OR APPROPRIATE

Petitioners claim that this case would allow this Court to clarify the relationship between choice of law and "legislative jurisdiction." Again, their claim is misleading and inaccurate. There are no "legislative jurisdiction" issues here. Petitioners cannot be heard to complain about the application of Georgia law or claim that the

choice of law "worked a markedly unfair surprise" upon them as they attempt to do in their Petition. It was not the Georgia legislature that decided what substantive law would be applied in this case. The state courts of Texas and Florida made that decision. The district court and the Fifth Circuit both recognized their obligation to use the state law of the forums (Florida and Texas) in deciding choice of law issues. Petitioners cannot, and do not, contest that Texas and Florida law constitutionally apply to them. Both Texas and Florida use the "most substantial relationship test", which clearly called for the application of Georgia law on issues of liability. Therefore, in the very truest sense, Petitioners selected Georgia substantive law in this case by filing suit in forums that called for its application by their state law choice of law tests.

CONCLUSION

The Petition for Writ of Certiorari should be denied. There is no conflict between the Fifth Circuit's decision below and this Court's formulation of the *Boyle* Government Contractor Defense. Furthermore, the application of Georgia law as mandated by the Texas and Florida "most substantial relationship" test was fair, appropriate, correct and constitutional. Petitioners' continued efforts in

this case to bend the facts and circumvent the law must be stopped now. Their Petition should be denied.

Respectfully submitted,

JACK O'NEILL
CLEMENTS, O'NEILL, PIERCE & NICKENS, L.L.P.
First Interstate Bank Plaza
1000 Louisiana, Suite 1800
Houston, Texas 77002-5009
(713) 654-7600

RON A. SPRAGUE*
GENDRY & SPRAGUE, P.C.
Airport Center, Suite 850
10100 Reunion Place
San Antonio, Texas 78216-4101
(210) 349-0511

Counsel for Respondents
*Counsel of Record

APPENDIX 1

In re AIR DISASTER AT RAMSTEIN AIR BASE, GERMANY, on 8/29/90, Plaintiff.

Olga PEREZ, etc., et al., Plaintiffs-Appellants,

v.

LOCKHEED CORP. and General Electric Company, Defendants-Appellees.

No. 95-50091.

United States Court of Appeals,
Fifth Circuit.

April 29, 1996.

Plaintiffs brought action against manufacturers of military aircraft, following fatal crash of aircraft, on claims of negligence and products liability. The United States District Court for the Western District of Texas, Morey L. Sear, Chief Judge, granted summary judgment for defendants. The Court of Appeals, Goodwin, Circuit Judge, sitting by designation, held that: (1) manufacturers had government contractor immunity from claims for strict liability, negligence, breach of warranty, and gross negligence in design, manufacture, and marketing of aircraft; (2) under Georgia law, manufacturers did not have duty to warn military of any danger in design of electrical circuits on aircraft; and (3) plaintiffs were not entitled to depose more than 16 witnesses on issue of liability.

Affirmed.

Appeal from the United States District Court for the Western District of Texas.

Before POLITZ, Chief Judge, and GOODWIN[1] and DUHÉ, Circuit Judges.

GOODWIN, Circuit Judge:

Plaintiffs, bringing product liability claims arising out of a fatal crash of an Air Force C-5A in Germany, appeal the summary judgment in favor of defendants, Lockheed and General Electric. We affirm.

I. BACKGROUND

The crash occurred approximately 17 seconds after takeoff from Ramstein Air Base in Germany on August 29, 1990. Thirteen of the seventeen servicemen aboard the aircraft were killed. Plaintiffs sued on theories of manufacturer's liability based upon Georgia state law failure to warn, breach of warranty and gross negligence.

A. *The Crash Aircraft*

The C-5A was designed, manufactured and delivered to the Air Force pursuant to a government contract with Lockheed Corporation.[2] Although the original procurement contract may have contained only general specifications, the actual development of the C-5A resulted in detailed specifications designed by both the defendants and the Air Force. Lockheed subcontracted with General

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[1] Circuit Judge of the Ninth Circuit, sitting by designation.

[2] Lockheed is a Delaware corporation and maintains its principal place of business in Georgia.

Electric to design and manufacture engines for the C-5A.[3] General Electric manufactured and designed the thrust reversers in Ohio. Lockheed installed the General Electric engines into the C-5A and conducted the remainder of its work on the C-5A in Georgia. The first C-5A was delivered to the Air Force, in Georgia, in 1971. The crash aircraft was maintained at Kelly Air Force Base in San Antonio, Texas, but flew missions all over the world.

B. *Modification of the Crash Aircraft*

From time to time, the C-5A, including the crash aircraft, has undergone modifications based on recommendations from the Air Force and from Lockheed itself. The modification relevant to this case was made pursuant to Engineering Change Proposal ("ECP") 7054. As requested and agreed to by the Air Force, the purpose of ECP 7054 was to reconfigure the engine pylons to maximize the separation of flammable substances from ignition sources. This reconfiguration also involved the relocation of the ground stud whose failure allegedly caused the accident. Importantly, however, the relocation of the ground stud did not change the original design of the circuit. Lockheed designed and manufactured a kit, based on ECP 7054, that was used to retrofit the pylons on all C-5As. The Air Force was to begin taking delivery of these kits in 1981. The Air Force, and not Lockheed or General Electric, installed the kits on the aircraft.

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[3] General Electric is incorporated and maintains its principal place of business in New York.

C. *Air Force Involvement in the Design and Manufacture of the C-5A*

The Air Force was at all relevant times, and still is, closely involved in the design, manufacture and maintenance of the C-5A. The Air Force directly participated in the design of nearly every part of the aircraft. In the instances where the Air Force was not directly involved, it approved the designs after reviewing them in detail with the relevant personnel of the defendants. As the planes were being manufactured and developed, the Air Force required Lockheed to put the various components through rigorous testing to ensure that all of the contract specifications had been satisfied. The Air Force reviewed and approved these tests. The Air Force did not merely "rubber stamp" the tests and data, but placed its officers on site to observe the development and manufacture of the C-5A, including the electrical circuit design at issue in this case. Once the planes were built, the Air Force and Lockheed conducted joint tests before putting them into active military service.

II. PROCEDURAL BACKGROUND

Seven separate lawsuits were filed in Texas and Florida state courts. Representatives of eleven of the decedents and one of the survivors filed products liability lawsuits asserting claims based on strict liability, negligence, negligent failure to warn, breach of warranty, and

gross negligence in the design, manufacture and marketing of the C-5A aircraft.[4]

The plaintiffs theorized that the aircraft crashed because of an uncommanded and undetected deployment of the thrust reverser on one of the two engines on the left side of the aircraft. The plaintiffs alleged that this deployment was caused by the defective design and manufacture, or modification, of the electrical system contained in the pylon (the component that attaches the engine to the wing). Although the plaintiffs' brief characterizes this as "one of the theories of liability" it is the only one mentioned in the record.

The electrical system was configured so that the circuit that sends the signals to deploy or retract the thrust reverser, the "enunciator", and the circuit that sends signals back to the cockpit control panel, the "indicator", were grounded by physical attachment to the same ground stud. The plaintiffs believe, but offered no proof, that this ground stud failed, causing a single point electrical failure, and simultaneously disabled both the enunciator and indicator circuits, making it impossible for the crew to know that the thrust reverser was deployed.

The defendants, on the other hand, contended that the accident was caused by crew inattention.

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[4] Most of the plaintiffs are citizens of Texas, although others are citizens of Florida, Kansas, Missouri and North Dakota.

The defendants removed all of the lawsuits to federal district courts in Texas and Florida on the basis of diversity jurisdiction. The Judicial Panel on Multidistrict Litigation, pursuant to 28 U.S.C. § 1407, transferred the cases to the Western District of Texas for pretrial proceedings because most of the plaintiffs are Texas residents and many relevant documents and witness [sic] were located at Kelly Air Force Base.

The district court, applying Texas conflicts-of-law rules borrowed from the Restatement (Second) of the Conflicts of Law, held that Georgia substantive law, instead of Texas law, governed the dispute. The court granted summary judgment in favor of the defendants on all of the plaintiffs' claims based on the original design of the electrical system in the pylons, and the pylon kit modifications, because they were time barred by Georgia's statute of repose.[5] (Memorandum and Order of July 14, 1994 and Memorandum and Order of January 6, 1995, respectively). The court also applied the statute of repose to the plaintiffs' failure to warn claim because there was no evidence that the defendants had *actual* knowledge of

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[5] Ga.Code Ann. § 51-1-11 (Michie 1993). The Georgia statute of repose extinguishes certain products liability claims if they are not brought within 10 years of the first sale of the allegedly defective product. Modifications that change the original design can restart the tolling of the statute of repose, but the modifications in this case did not change the original design of the circuit and therefore the statute of repose did not restart. *See Butchkosky v. Enstrom Helicopter Corp.*, 855 F.Supp. 1251, 1257 (S.D.Fla.1993) (modification must change original design of critical component that is alleged to have caused the injury).

any danger that the system may have harbored.[6] The court rejected the plaintiffs' breach of warranty claims because no privity of contract existed between the parties as required under Georgia law. Finally, the court rejected the claim based upon allegations of willful, wanton and reckless misconduct (gross negligence) because the plaintiffs offered no evidence to support recovery under this theory. The court did not rule on the defendants' government contractor immunity defense because at the time it was presented the plaintiffs had not sufficiently articulated what they thought was the cause of the accident. Therefore, the court could not make the necessary factual findings to determine whether government contractor immunity applied. *See* Memorandum and Order of November 14, 1994 at 13. The court considered the defenses based upon the statute of repose, and the lack of any duty to warn the Air Force of obvious design characteristics in which the Air Force had participated as sufficient grounds to grant summary judgment.

Plaintiffs' timely appeals were consolidated by this Court *sua sponte*.

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[6] The district court misinterpreted Georgia law on failure to warn claims. *See Chrysler Corp. v. Batten*, 264 Ga. 723, 450 S.E.2d 208, 211-13 (1994) ("the legislature carefully excluded failure to warn causes of action from the statute of repose" where the manufacturer has *actual or constructive* knowledge of a danger) (emphasis added). That error does not affect the outcome of this case.

III. GOVERNMENT CONTRACTOR IMMUNITY

A. *Standard of Review*

We review the grant of summary judgment *de novo*. *FDIC v. Ernst & Young*, 967 F.2d 166, 169 (5th Cir.1992). Once a motion for summary judgment has been properly made, the burden shifts to the nonmovant to go beyond the pleadings and by his or her own affidavits, depositions, answers to interrogatories, or admissions to come forward with specific facts showing that there is a genuine issue for trial. *See Celotex Corp. v. Catrett*, 477 U.S. 317, 324, 106 S.Ct. 2548, 2553, 91 L.Ed.2d 265 (1986); Fed.R.Civ.Proc. 56(e).

Although, as noted, the district court did not specifically rule on government contractor immunity, that defense is properly briefed in both the trial court and this court. All the depositions and affidavits relevant to the defense were before the court at the time of its final ruling. We hold that the contractor immunity defense was itself a sufficient basis for summary judgment with respect to all claims, except possibly the "failure to warn" claim. We are obliged, moreover, to affirm a correct decision for any appropriate reason supported by the record. *Pitts v. American Sec. Life Ins. Co.*, 931 F.2d 351, 357 (5th Cir.1991).

B. *The Boyle Test for Government Contractor Immunity*

In *Boyle v. United Technologies Corp.*, 487 U.S. 500, 108 S.Ct. 2510, 101 L.Ed.2d 442 (1988) the Supreme Court wrote that

> [l]iability for design defects in military equipment cannot be imposed, pursuant to state law, when (1) the United States approved reasonably precise specifications; (2) the equipment conformed to those specifications; and (3) the supplier warned the United States about the dangers in the use of the equipment that were known to the supplier but not to the United States. *Id* at 512, [108 S.Ct. at 2518].

The Court explained that government contractor immunity is derived from the Government's immunity from suit where the performance of a discretionary function is at issue. *Id* at 511, 108 S.Ct. at 2518 (citing the Federal Tort Claims Act, 28 U.S.C. § 2680(a)).[7] The Court concluded that "the selection of the appropriate design for military equipment to be used by our Armed Forces is assuredly a discretionary function." *Id* at 511, 108 S.Ct. at 2518.

The first two elements of the test ensure that the Government, and not the contractor, is exercising discretion in selecting the design. The third element is necessary to eliminate any incentive that this defense may create for contractors to withhold knowledge of risks. *Boyle*, 487 U.S. at 512, 108 S.Ct. at 2518.

1. The Air Force Approved Reasonably Precise Specifications

In *Stout v. Borg-Warner Corp.*, 933 F.2d 331 (5th Cir.1991), this Court enumerated some of the constituents

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[7] Section 2680(a) creates an exception to the consent to suit otherwise established by the Federal Tort Claims Act, 28 U.S.C. § 1346(b).

of "reasonably precise specifications" and government approval of those specifications for the purposes of satisfying the first element of the government contractor immunity defense. We held that the government contractor immunity defense is available where "review [of the project] involved, inter alia, [the contractor's] submission of detailed drawings at various progressive stages of the design, critical design reviews where Army engineers' critiqued [the contractor's] work, and, finally, the production of prototype models tested and evaluated for months by the Army for its actual performance." *Stout*, 933 F.2d at 336. *See Trevino v. General Dynamics Corp.*, 865 F.2d 1474, 1480 (1989) (if government engages in meaningful review of design the first element of Boyle test is established); *see also Kleemann v. McDonnell Douglas Corp.*, 890 F.2d 698, 701 (4th Cir.1989) ("It is this salient fact of governmental participation in the various stages of the aircraft's development that establishes the military contractor defense."); *Harduvel v. General Dynamics Corp.*, 878 F.2d 1311, 1320 (11th Cir.1989) (requirement that government approve reasonably precise specifications is met where contractor incorporated design that government subsequently reviewed and approved).

In this case, the Air Force's substantive review, evaluation and testing of the C-5A clearly implicates the Government's discretionary function and approval of reasonably precise specifications. The defendants included with their motion for summary judgment unrebutted affidavits declaring that Lockheed, General Electric and the Air Force worked closely together on the development of the C-5A from its planning stages to its full production. In addition, the Air Force, through its personnel,

inspected and supervised every aspect of the production of the C-5A. Clearly, the approvals in this case go far beyond mere rubber stamping. *See Trevino*, 865 F.2d at 1480 ("When the government merely accepts, without any substantive review or evaluation, decisions made by a government contractor, then the contractor, not the government, is exercising discretion"). In this case, the Government did not leave "the critical design decisions to the private contractor," but worked closely with the defendants every step of the way. *Trevino*, 865 F.2d at 1480.

2. The C-5A Conformed to the Reasonably Precise Specifications

The plaintiffs argued that the C-5A did not conform to the original design specifications because "[w]hat the Air Force chose in the C-5A procurement program was a failsafe performance specification. . . . " According to the plaintiffs, the design of the circuit was not failsafe because a single point electrical failure, such as the one alleged to have occurred, could result in an accident. However, such a general design specification is not contemplated by the first element of the *Boyle* test because "[o]nly the detailed, quantitative specifications – and not those calling for such vagaries as a failsafe, simple or inexpensive product – are relevant to the government contractor defense." *Kleemann v. McDonnell Douglas Corp.*, 890 F.2d 698, 703 (4th Cir.1989).

The defendants introduced evidence showing that the Air Force inspectors were present and actively involved throughout the design, review, development and testing of the C-5A. Furthermore, the evidenced [sic]

showed that the Air Force accepted and has used the C-5A for over 20 years without any significant problems. From this evidence the district court could have concluded that the C-5A was built in accordance with Air Force specifications. *See Smith v. Xerox Corp.*, 866 F.2d 135, 138 (5th Cir.1989).

In an attempt to rebut the defendants' evidence, the plaintiffs included affidavits and other exhibits describing the general process of military procurement for military aircraft, such as the C-5A, where the Government has very little to do with the actual design and development of the plane. However, none of that information specifically addresses the actual development of the C-5A; the information describes only how procurement was to work in theory. This background information, while interesting, is of no legal relevance because it does not rebut the defendants' highly specific information about the actual development of tne C-5A.

3. Warning of Dangers not Known to the Air Force

Finally, the plaintiffs argue that the defendants did not warn the Air Force about the dangers created by the design of the electrical circuit. The defendants had a duty to warn the Air Force only of design defects of which the Air Force had no knowledge. *See Stout*, 933 F.2d at 336.

The unrebutted deposition testimony of an Air Force engineer involved in the development and implementation of ECP 7054 described how wires were moved from one place in the pylon to another, but that if two wires terminated into the same ground stud that was not

changed. This testimony places beyond all the doubt the Air Force's specific knowledge about the design of the electrical circuit. This conclusion about the Air Force's knowledge is sound, even without the benefit of the deposition testimony, because in order for the Air Force to have changed the location of the ground stud in the pylon pursuant to the modification, its responsible officers had to have seen the stud and been aware of its design.

The unrebutted affidavits and exhibits describing the development of the C-5A clearly establish that the Air Force approved reasonably precise specifications of the C-5A, the C-5A conformed to those specifications and the Air Force was aware of any safety implications created by the design of the electrical circuit. The plaintiffs did not come forward, as is their burden on summary judgment, with any evidence to create a triable issue of material fact. Therefore, the defendants are entitled to the government contractor immunity defense.

IV. FAILURE TO WARN

A separate failure to warn claim may survive the government contractor immunity defense if the defendant cannot establish "an identifiable federal interest or policy in the existence or methods of warning and a significant conflict between the federal interest or policy and the operation of state law." *Garner v. Santoro,* 865 F.2d 629, 635-36 (5th Cir.1989). A conflict between federal policy and state law might arise if there is evidence that the Government was involved in the decision to give, or not to give, a warning. *Id. But see Stout,* 933 F.2d at 336-37

(applying government contractor immunity to a failure to warn claim without reference to a "significant conflict"); *Smith*, 866 F.2d at 139 (same), *Trevino*, 865 F.2d at 1487 (same). However, if the failure to warn claim is part of the design defect or unreasonably dangerous product theory of liability, then government contractor immunity applies.[8] *Garner*, 865 F.2d at 632 n. 8, 635. We will not address whether, under the facts of this case, the failure to warn claim would be defeated by government contractor immunity because the record does not establish whether or not the Air Force and Lockheed or General Electric were involved in discussions about warnings. Without such evidence in the record, it is not possible for this Court to determine whether the Government exercised sufficient discretion with respect to a warning to bring the warning claim within the scope of *Boyle*. Therefore, we will address the failure to warn claim only on the point whether the manufacturer had a duty, under the relevant state law, to give warnings of facts that were equally within the knowledge of the Air Force.

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[8] It is interesting to note that plaintiffs, in their summary judgment reply brief, argued that their failure to warn claim is "nothing more nor less than a type of a design defect." (Record at 1803). If the trial court accepted this argument, then the plaintiffs' failure to warn claim would also have failed because of government contractor immunity. On appeal, however, plaintiffs have asserted that a failure to warn claim is distinct from a design defect claim, and is not preempted by government contractor immunity.

A. *Choice of Law*

1. Determining Which Choice of Law Rules to Apply

We review a district court's choice of law determination *de novo*. *Allison v. ITE Imperial Corp.*, 928 F.2d 137, 138 (5th Cir.1991). In a diversity action, a federal court must apply the choice of law rules of the state in which it sits. *Klaxon Co. v. Stentor Elec. Manufacturing Co.*, 313 U.S. 487, 496, 61 S.Ct. 1020, 1021, 85 L.Ed. 1477 (1941). Where a transferee court presides over several diversity actions consolidated under the multidistrict rules, the choice of law rules of each jurisdiction in which the transferred actions were originally filed must be applied. *Van Dusen v. Barrack*, 376 U.S. 612, 84 S.Ct. 805, 11 L.Ed.2d 945 (1964); 28 U.S.C. § 1407. Both Texas and Florida have adopted the same choice of law rules: the Most Significant Relationship test set forth in Sections 6 and 145 of the Restatement (Second) of Conflict of Laws (the "Restatement").[9] *See Gutierrez v. Collins*, 583 S.W.2d 312,

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[9] Restatement Section 6 states:

(1) A court, subject to constitutional restrictions, will follow a statutory directive of its own state on choice of law.

(2) When there is no such directive, the factors relevant to the choice of the applicable rule of law include:

(a) the needs of the interstate and international systems,

(b) the relevant policies of the forum,

(c) the relevant policies of other interested states and the relative interests of those states in the determination of the particular issue,

318 (Tex.1979); *Bishop v. Florida Specialty Paint Co.*, 389 So.2d 999 (Fla.1980). Under this doctrine, a court, subject to constitutional constraints, must apply the law of the state with the most significant relationship to the particular substantive issues before the court. Because both parties agree that either Texas or Georgia law applies, this Court's inquiry is limited to the substantive law of those two states. *See Mitchell v. Lone Star Ammunition, Inc.*, 913

(d) the protection of justified expectations,

(e) the basic policies underlying the particular field of law,

(f) certainty, predictability and uniformity of result, and

(g) ease in the determination and application of the law to be applied.

Restatement Section 145 states:

(1) The rights and liabilities of the parties with respect to an issue in tort are determined by the local law of the state which, with respect to that issue, has the most significant relationship to the occurrence and the parties under the principles stated in § 6.

(2) Contacts to be taken into account in applying the principles of § 6 to determine the law applicable to an issue include:

(a) the place where the injury occurred,

(b) the place where the conduct causing the injury occurred,

(c) the domicil [sic], residence, nationality, place of incorporation and place of business of the parties, and

(d) the place where the relationship, if any, between the parties is centered.

These contacts are to be evaluated according to their relative importance with respect to the particular issue.

F.2d 242, 249 (5th Cir.1990); *Crisman v. Cooper Industries*, 748 S.W.2d 273, 276 (Tex.App.-Dallas 1988).

All of the causes of action in this case rely on the same theory of liability: the defective manufacture and design of the electrical system in the pylon. Therefore, the district court correctly determined that the only substantive issue for the purpose of conflicts analysis was the alleged design defect. *See e.g., Duncan v. Cessna Aircraft Co.*, 665 S.W.2d 414, 421 (Tex.1984).

2. The Most Significant Relationship Analysis

Restatement Section 6 contains the general principles involved in the conflicts analysis whereas Restatement Section 145 lists the factual matters to be considered when applying the Section 6 principles to a given case. *See Crisman v. Cooper Industries*, 748 S.W.2d 273, 276 (Tex.App.-Dallas 1988). The application of the most significant relationship test turns on the qualitative nature of the contacts rather than the quantity of the contacts outlined in the Restatement. *Id.* Because the place of injury is fortuitous, correct analysis should give more weight to each state's contacts with the design and manufacture of the electrical system than to the residential choices of the plaintiffs. *See Foster v. United States*, 768 F.2d 1278, 1282-83 (11th Cir.1985) (fortuitous nature of aircraft accident locale entitled place of injury factor to little weight in conflicts analysis); Restatement § 145, comment e.

Virtually all of the relevant conduct complained of took place in Georgia, with some possible activity by General Electric in Ohio. Georgia thus has the strongest

interest in applying its law to businesses that design, manufacture and sell products into its stream of commerce. Texas on the other hand, has its only relevant contacts with this case in the fact that many, but not all, of the plaintiffs are domiciled there. Because both the case law and the Restatement instruct us to place more emphasis on the place of the alleged misconduct, than on the residential preferences of scattered plaintiffs, the district court correctly concluded that Georgia law should apply.

B. *The Defendants Had No Duty to Warn*

In order to defeat the summary judgment, the plaintiffs must offer evidence tending to prove that the defendants knew about a danger created by the design of the wiring and that the failure to warn of that danger was the proximate cause of the injuries alleged. *See Talley v. City Tank Corp.*, 158 Ga.App. 130, 279 S.E.2d 264 (1981). However, there is no duty to warn a purchaser of a physical fact that is open and obvious, or of any potential risk which is equally known and appreciated by both the manufacturer and the purchaser. *Herschel McDaniel Funeral Home, Inc. v. Hines*, 124 Ga.App. 47, 183 S.E.2d 7, 9 (1971); *YMCA v. Bailey*, 112 Ga.App. 684, 146 S.E.2d 324 (1965); *Gibson v. Consolidated Credit Corp.*, 110 Ga.App. 170, 138 S.E.2d 77 (1964).

As discussed with respect to the government contractor immunity defense, the Air Force was so involved in the C-5A project it knew about the danger – if any – inherent in the circuit design. Therefore, the defendants

did not have a duty to warn the Air Force. We affirm the summary judgment against the plaintiffs on this claim.

V. LIMITATIONS ON DISCOVERY

A. *Standard of Review*

We review decisions regarding discovery for abuse of discretion. *Duke v. University of Texas*, 729 F.2d 994, 997 (5th Cir.), *cert. denied*, 469 U.S. 982, 105 S.Ct. 386, 83 L.Ed.2d 320 (1984).

B. *Number of Witnesses Permitted for Depositions*

The plaintiffs argue that this Court should reverse because the district court abused its discretion by limiting the number of witnesses they could depose on the liability issue to 16 for each side. The plaintiffs also want the opportunity to depose more witnesses on issues related to the claims that were not based on the original design of the C-5A. Limiting the number of deposition witnesses to sixteen for each side is not an abuse of discretion in this case. The plaintiffs actually deposed only 15 of their allotted 16 witnesses. Furthermore, we find nothing in the record to suggest that plaintiffs made a timely request to go back and look into issues that were unexamined in earlier discovery, or that plaintiffs were prejudiced by the limitation. The decision to limit deposition testimony to 16 witnesses for each side does not require reversal of this summary judgment.

VI. CONCLUSION

In sum, the defendants have come forward with sufficient evidence to support the assertion of the government contractor immunity defense, and the plaintiffs have failed to raise any genuine issue of material fact regarding that defense. In addition, the defendants did not have the duty to warn the Air Force of the danger – if any – created by the design of the electrical circuit because the Air Force knew as much as the defendants knew about the design of the circuit. Finally, the district court did not abuse its discretion by limiting each side to 16 depositions. The summary judgment for the defendants Lockheed and General Electric is affirmed.

AFFIRMED.

APPENDIX 2

Olga PEREZ, etc., et al. and David Edward Perez, et al., Plaintiffs-Appellants,

v.

LOCKHEED CORP. and General Electric Company, Defendants-Appellees.

No. 95-50091.

United States Court of Appeals,
Fifth Circuit.

July 5, 1996.

Plaintiffs brought action against manufacturers of military aircraft, following fatal crash of aircraft, on claims of negligence and products liability. The United States District Court for the Western District of Texas, Morey L. Sear, Chief Judge, granted summary judgment for defendants. The Court of Appeals, Goodwin, Circuit Judge, sitting by designation, 81 F.3d 570, affirmed. On plaintiff's petition for rehearing, the Court of Appeals denied petition but clarified prior opinion by holding that under Georgia law, manufacturers did not have duty to warn military or pilots of any danger in design of electrical circuits on aircraft.

Petition denied.

Appeal from the United States District Court for the Western District of Texas.

Opinion filed April 29, 1996,
81 F.3d 570 (1996).

Before POLITZ, Chief Judge, and GOODWIN[1] and DUHÉ, Circuit Judges.

PER CURIAM:

We clarify our panel opinion in this case by amending Section IV.B as follows:

B. *The Defendants Had No Duty to Warn*

In order to defeat the summary judgment, the plaintiffs must offer evidence tending to prove that the defendants knew about a danger created by the design of the wiring and that the failure to warn of that danger was the proximate cause of the injuries alleged. *See Talley v. City Tank Corp.*, 158 Ga.App. 130, 279 S.E.2d 264 (1981). However, there is no duty to warn a purchaser of a physical fact that is open and obvious, or of any potential risk which is equally known and appreciated by both the manufacturer and the purchaser. *Herschell McDaniel Funeral Home, Inc. v. Hines*, 124 Ga.App. 47, 183 S.E.2d 7, 9 (1971); *YMCA v. Bailey*, 112 Ga.App. 684, 146 S.E.2d 324 (1965); *Gibson v. Consolidated Credit Corp.*, 110 Ga.App. 170, 138 S.E.2d 77 (1964). The duty to warn extends to the ultimate user of a product. *See, e.g., White v. W.G.M. Safety Corp.*, 707 F.Supp. 544, 547 (S.D.Ga.1988), aff'd 891 F.2d 906 (11th Cir.1989).

We need not determine whether, under Georgia law, the Air Force or the pilots are the ultimate users of the C-5A. As discussed, with respect to the government contractor immunity defense, the Air Force was so involved

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[1] Circuit Judge for the Ninth Circuit, sitting by designation.

in the C-5A project it knew about the danger – if any – inherent in the circuit design. Therefore, the defendants did not have a duty to warn the Air Force. In addition, the defendants had no duty to give a warning to the pilots because the Air Force was a learned intermediary. *See, e.g., Stuckey v. Northern Propane Gas Co.*, 874 F.2d 1563, 1568-69 (11th Cir.1989) (manufacturer's duty to warn ultimate consumer is discharged where an intermediary party has knowledge of the danger). We affirm the summary judgment against the plaintiffs on this claim.

With this amendment, IT IS ORDERED that the petition for rehearing is DENIED. No active judge of the court or member of the panel has requested an en banc poll, the suggestion for rehearing en banc is also DENIED.

APPENDIX 3

AFFIDAVIT OF O.V. BRAUN

THE STATE OF GEORGIA §

COUNTY OF DeKALB §

I, O. V. BRAUN, am over eighteen (18) years of age and fully competent to make this Affidavit. The following matters are true and within my personal knowledge.

1. I was born at Syracuse, New York on August 11, 1928. I obtained a Bachelors of Science Degree in Industrial Engineering from Georgia Tech. in 1953. I started my career with Lockheed Corporation that same year. I joined the company as a price estimator in the Finance Department. I then worked as an Administrator in the C-130 Program before moving to the Industrial Engineering Section. I worked as an Industrial Engineer on various types of aircraft before transferring into the Chief Draftsman's office to work on drafting and engineering procedure manuals. I was then transferred to the C-5A Configuration and Data office where I became manager. I next moved into Contracts and where I negotiated with the Government on contracts dealing with the C-130, C-141, and C-5A. When the Military Contracts Department was created, I was assigned as Manager of Military Contracts. In that position, I was responsible for the negotiations and contract compliance on all military aircraft manufactured by Lockheed, including the C-5A. This included the negotiation of SA-1000 (as explained later). I was intimately familiar with the contractual requirements for the C-5A Program.

2. The C-5A Galaxy manufactured by Lockheed Aeronautical Systems Company is one of the world's largest cargo aircraft. It is capable of delivering to virtually any location in the world completely equipped combat units, support forces, and all types of supplies including large and heavy weapons and military vehicles. This includes such outsized items as the 74 ton mobile scissors bridge and the M1A1 Battle Tank.

3. Physically, the C-5A is 247.8 feet long and has wing span of 222.8 feet. It is powered by four TF39-GE-1C turbofan engines, manufactured by General Electric Company, rated at 43,000 pounds of thrust each. The maximum total takeoff weight at 2.25g is 840,000 pounds, with a maximum payload of 265,000 pounds. Its cargo hold is 19 feet wide, 13.5 feet high and 144.6 feet long for exceptionally large volumes of cargo.

4. The upper deck compartment of the C-5A has 73 seats available for equipment operators or other passengers. At destination, personnel are available immediately to drive the vehicles off the plane or otherwise operate equipment being delivered.

5. Without refueling, the C-5A can airlift 50 tons of men, women and supplies for 5,742 nautical miles or 76.5 tons for 5,000 nautical miles. With its air refueling capability, it has worldwide range.

6. Some of the outstanding airlift performances by the C-5A include a non-stop Chicago to Moscow flight with an 85 ton super conducting electromagnet; the delivery of 825 tons of equipment, tanks and helicopters to the besieged air base at Da Nang, Viet Nam, in 1972 in a span of only ten missions with an average ground time of only

32 minutes from touchdown to takeoff; a multi-aircraft, 14,000 mile round trip mission delivering a total 10,763 tons of cargo during the 1973 Israeli airlift; and the delivery of a 100 bed mobile hospital, purification units and communications equipment for relief operations in earthquake damaged Nicaragua in 1972. C-5A Galaxies, including the plane in question, and their C-5B sister ships, were instrumental in transporting men and material to and from the Middle East during Operations Desert Shield and Desert Storm. Most recently, C-5A Galaxies were used to delivery relief supplies to the newly independent states of the former Soviet Union and troops and supplies to support the United Nations' effort in Somalia.

7. The C-5A contract was negotiated and awarded under a then new procurement concept referred to as the "total package concept." The "total package" contract meant that Lockheed, as prime contractor, was responsible for the entire program of research, development, testing, production, and support of the C-5A Galaxy during the life of the contract and was required to work closely with, and under the surveillance of, Air Force engineers and Systems Management specialists in the course of developing the aircraft. The procurement process was initiated by the United States Air Force on October 14, 1964 when it issued Request For Proposal (RFP) No. 33-657-65-5027 entitled Request for Proposal for the Long Range Heavy Logistic Transport Support System (CX-HLS) System 410A. That RFP called for the development of a new, long range, heavy cargo airplane. The aircraft was to be the first of its kind and would be the largest aircraft in the world at the time of its development. The

RFP originated from the CX-HLS Program Office under the U.S.A.F. Deputy for Systems Management, Aeronautical Systems Division, Wright-Patterson AFB, Ohio.

8. The Air Force received competing proposals for the CX-HLS contract from Lockheed, Boeing, and McDonald-Douglas. (A fourth proposal featuring a large lighter-than-air-ship was rejected as non-responsive to the bid proposal.) As part of that competition, the U.S.A.F. System Program Office approved a Systems Specification for the CX-HLS, Systems Specification SS40001. That Systems Specification primarily contained the general performance, design, development, and test requirements for the aircraft.

9. In response to the RFP and Systems Specification, Lockheed-Georgia Company, a Division of Lockheed Aircraft Corporation (Lockheed), working closely with the United States Air Force engineers and other experts, prepared and submitted to the United States Air Force the Contract End Item Detail Specification for 410A Heavy Logistics Support Air Vehicle Contract End Item (CEI) CP40002 in April, 1968. That Specification was approved by the United States Air Force as documented by the signature of an Air Force official from the Systems Program Office charged with the responsibility of overseeing the development of the CX-HLS. The aircraft being developed was designated the "C-5A Air Vehicle" and was subsequently nicknamed the "C-5A Galaxy."

10. After careful evaluation of competing proposals the United States Air Force awarded a development contract for the 410A Heavy Logistic Support System to Lockheed based on what was to become known as the

C-5A Galaxy. The contract, AF33(657)-15053, was signed by Mr. Edward J. Trusela, Contracting Officer, on behalf of the United States of America on October 1, 1965. It was signed on behalf of Lockheed on September 9, 1965 by Mr. T. R. May, Attorney-in-Fact. A true and correct copy of Contract AF33(657)-15053 is attached hereto as Exhibit "A."

11. The contract covered virtually every aspect of the design and development of the C-5A aircraft and specifically required that it be developed in accordance with the System Specification No. SS40001, the CEI Specification CP40002, and the Interface Control Document 4AZAP00001. The Interface Control Document 4AZAP00001 was a document which coordinated the design of the C-5A aircraft with the design of the engines. The engines were being separately developed by competing manufacturers. The contract for the engines was eventually awarded to General Electric Company (GE) on October 6, 1965 and the TF39 engine was selected by the United States Air Force for use on the C-5A Galaxy. The engines were furnished to Lockheed by the United States Air Force, and they were developed and produced under separate United States Air Force contracts with General Electric Company.

12. The development of the C-5A Galaxy was, at all times, undertaken in accordance with and under the approval purveyance of the Air Force Systems Command and AFSCM 375-1. AFSCM 375-1 is entitled "Configuration Management During Definition and Acquisition Phases." It governed the initial design, manufacturing and acquisition of the C-5A Galaxy and delineated the involvement, approval authority and control vested in

the United States Air Force for the project. A true and correct copy of AFSCM 375-1 is attached hereto as Exhibit "B."

13. Contract AF33(657)-15053 initially provided for the development of five (5) Category I Flight Test Aircraft. The contract also contained the System Specification Number SS 40001C. The System Specification, in turn, contained the CP 40002 series of Contract End Item (CEI) detail specifications, which specified all "engineering critical components." The term "engineering critical component" equivalent items because of their importance to engineering management, complexity, performance, or critical nature with regard to the engineering aspects of the system/equipment development and production. The System Specification, Number SS 40001C and the CP 40002 series of (CEI) detail specifications were formally approved by Air Force's System Program Office.

14. Critical component specifications were developed under the contract and concurred with by the A.F. Procuring Contracting Officer (PCO) through an interactive process known as the Preliminary Design Review (PDR) and Critical Design Review (CDR). The PCO represented the United States Air Force and was the person with legal authority to commit the Government via a contractual instrument.

15. The components that required a critical component specification were listed in the specification of the Contract End Item (CEI) of which they are a part. The United States Air Force thereby controlled the list of critical components. Otherwise, management control of components was accomplished by the contractor until the

component specification was formally approved. The critical component specification was approved at the time the CEI in which it was installed was accepted as qualified and the test data supporting the qualification was delivered. A critical component was required, from the time of formal approval, to be maintained by Specification Change Notices (SCNs) and/or specification revisions as directed by the United States Air Force. SCNs for critical component specifications affected by a Class I engineering change had to be submitted as part of an Engineering Change Proposal (ECP) package for formal approval before a change could be incorporated into the CEI.

16. Any change or revision in a part or a specification which had been formally approved, whether he change was proposed by Lockheed, a Government agency, or some third party had to be documented and formally approved.

17. The Contract AF33(657)-15053 also provided for the manufacture and delivery of fifty-three (53) C-5A Galaxies in Fiscal Years 1967, 1968 and 1969. By Supplemental Agreement No. 235 to Contract AF33(657)-15053, the United States Air Force requested and contracted for delivery of fifty-seven (57) additional C-5A Galaxies during Fiscal Years 1970, 1971 and 1972.

18. All services provided under the contract were subject to continuous United States Air Force monitoring and inspection, including the design and verification of testing of designated aircraft components. In accordance with the contract, all services required to produce aircraft

were inspected and accepted by the United States Air Force.

19. These services included preparation of engineering analyses, drawings required to fabricate parts and specifications for components to be purchased from other sources. Process specifications were also developed to provide manufacturing departments with instructions for fabricating various aircraft components.

20. All of the detailed design specifications, drawings and sub-contract specifications were reviewed and approved by the United States Air Force in accordance with the contract. All designs were submitted for approval during Preliminary Design Reviews (PDR) and later subjected to Critical Design Reviews (CDR). The United States Air Force regularly required revisions of the proposed design and ultimately approved the design only after the revisions were incorporated into the design by Lockheed. Lockheed routinely interacted with United States Air Force experts and engineers during those reviews. First Article Compliance Inspections (FACI's) were conducted by the Air Force on each part of the aircraft as they were manufactured. The manufactured part was checked physically and against the engineering drawings to confirm compliance with design specifications.

21. The C-5A Galaxy which was involved in the accident near Ramstein Air Base, Germany on August 28, 1990 was aircraft number LAC 0031 (Lockheed Serial Number) and United States Air Force serial number AF68-0228. That aircraft was designed and manufactured under Contract AF33(657)-15053, and was delivered to

the United States Air Force on January 9, 1971. A true and correct copy of DD Form 250 accepting delivery of that aircraft and certifying that it complied with the applicable specifications is attached hereto as Exhibit "C."

22. During the first part of 1971, a series of negotiations took place between the United States Air Force and Lockheed resulting in a Supplemental Agreement to the contract which became effective on May 31, 1971. This Supplemental Agreement added additional governmental management controls and reduced the total number of aircraft to be produced to eighty-one (81). The Supplemental Agreement (Modification No. 1000-D) because known as Supplemental Agreement No. 1000 to Contract AF33(657)-15053 (hereinafter SA-1000). A true and correct copy of SA-1000 is attached hereto as Exhibit "D". SA-1000 superseded and replaced the original contract and was retroactive in effect.

23. Throughout the C-5A program, the United States Air Force imposed extensive testing of all aircraft components and systems, pursuant to the contract. The Air Force required Lockheed to develop detailed test plans which were reviewed and approved by the Air Force before testing was accomplished. Tests were then conducted and the results were reviewed and approved by the Air Force. These tests were completed in order to comply with the quality assurance requirements delineated in the System Specification No. SS 40001, CEI Specifications CP40002, Military Specifications and Critical Component Specifications. These tests were conducted by the system contractor. The United States Air Force participated, evaluated, and assisted in the control of most of the systems tests through the System Program Office.

24. The Air Force would not accept such components unless they passed the appropriate tests conducted according to United States Air Force approved tests plans and test procedures. United States Air Force inspectors were also on site during the development and manufacture of each C-5A Galaxy to insure quality control and specification compliance. FACI's were conducted on each part of the aircraft. Those inspectors did not conduct merely *pro forma* inspections or "rubber stamp" the manufacturer's data. They enforced strict quality control through genuine inspection of product and procedure, including the monitoring of acceptance tests.

25. In addition to the United States Air Force involvement in the actual testing and verification of quality requirements, the overall quality system in place at Lockheed was also audited and approved by the United States Air Force in accordance with the Handbook – H50 "Evaluation of a Contractor's Quality Program." (H50) A True and correct copy of the H50 is attached hereto as Exhibit "E." Furthermore, H50 also required that the government representative be responsible for determining that contractual requirements have in fact been complied with prior to the acceptance of the product and that the final decision of product acceptability was solely the responsibility of the government.

26. The Preliminary Design Review (PDR) No. 11 for the nacelle, pylon, and thrust reverser took place in Chula Vista, California on June 3 - 6, 1967. Initial Air Force approval of the design was given following that PDR. Critical Design Review (CDR) No. 3 for the nacelle, pylon, and thrust reverser took place in Chula Vista, California on November 7 - 9, 1967. After careful review

of the data submitted at the CDR, the Air Force asked for a second meeting to address specific aspects of the design. The meeting, designated CDR No. AC-3, was held at Lockheed on February 28 and March 1 and 2, 1968. Air Force personnel were also invited to attend the subsequent Production Item Configuration Inspection (PICI) at the General Electric Production Plant at Evendale, Ohio to assure conformance of the thrust reverser parts and assemblies to United States Air Force specifications. Following the design reviews and configuration inspection described, the United States Air Force again approved the design of the C-5A Galaxy nacelle, pylon, and thrust reverser components and assemblies.

27. The "Rollout" of the first C-5A Galaxy took place on March 2, 1968 at the Lockheed plant in Marietta, Georgia. President Lyndon B. Johnson attended the ceremony. The first flight took place later that year on June 30, 1968.

28. Testing of the C-5A Galaxy took place in accordance with the contract. Combined Category I and II Flight Tests were conducted as part of the Flying Qualities Test Program for the C-5A aircraft. Most of these tests were conducted on ship LAC 0001 (USAF serial number 66-8303). The first tests were conducted jointly by USAF personnel and Lockheed personnel at the Air Force Flight Test Center (AFFTC) at Edwards AFB, California from August 17, 1969 through January 19, 1970. Stability and control tests were conducted on ship LAC 0002 (USAF serial number 66-8304) during the Air Force Preliminary Evaluation (AFPE) in July and August of 1969. Tests including pitch upset, dive and most lateral control tests with the augmentation system disabled were conducted

on ship LAC 0003 (USAF serial number 66-8305) at Marietta, Georgia in November and December of 1969. Performance and results of these tests are reflected in Report No. LG1T19-1-10 dated June 1970 and entitled C-5A category I/II Engineering Flight Test Flying Qualities Test Results which is signed and approved by Col. Thomas J. Cecil, USAF, Commander, 6512 Test Group, and by Brigadier General Robert M. White, USAF, Commander, AFFTC. A true and correct copy of Report No. LG1T19-1-10 is attached hereto as Exhibit "F."

29. From time to time, Lockheed has made recommendations to, and received recommendations from, the United States Air Force relating to design changes on the aircraft and/or its components. When a change was considered desirable by Lockheed, or when a change was requested by the United States Air Force, the respective engineers would prepare an Engineering Change Proposal (ECP) and submit it to the United States Air Force for approval. The United States Air Force would review and evaluate the design change in terms of its product improvement, safety, cost feasibility and practicality. If the ECP was accepted, the United States Air Force would define in the ECP the work that would be done, when it would be done and who would do it. The United States Air Force accepted some ECPs and disapproved others. ECPs that were accepted were incorporated into each airplane in the fleet. This insured that all C-5As in the Air Force were the same. No change to the design of the aircraft or its components could be made by Lockheed without United States Air Force approval.

30. The United States Air Force, United States Air Force Reserves, and Air National Guard are currently the

only entities operating C-5 Galaxy aircraft. The United States Air Force, therefore, is one of the most knowledgeable organizations regarding the aircraft operations. The United States Air Force and is reserve components are solely responsible for the maintenance of the C-5A fleet. Furthermore, the United States Air Force was made aware of the risks that were known to Lockheed during the design of the C-5A Galaxy. Lockheed went to great lengths to identify and evaluate potential hazards as evidenced by the LG1T10, LG1T20, LG1US281, LG1US284, LG1US285, LG1US287, and LG1US288, series of documents and also, including but not limited to, numerous failure mode effects and fault analyses. Those documents were submitted, in the form of Engineering Reports, to the United States Air Force System Program Office (SPO). Further details that are included in these reports are, the likelihood of occurrence, hazard severity, failure predictability and the consequences of failures.

31. The C-5A Galaxy is a safe, reliable aircraft. It has served this country well since 1969, in peace time and in war. It was the backbone of Operation Desert Shield and Operation Desert Storm, along with the C-5B, moving millions of tons of men, women, equipment, ammunition and supplies to and from the Middle East. Indeed, the last flight of the plane in question was part of that effort. To date, of the eighty-one (81) C-5As delivered to the United States Air Force, only five (5) have been attrited from the fleet. (Three of these were lost to accidents on the ground.) The C-5A was conceived to be the best possible way to move massive amounts of people, machines, and cargo over long distances at jet airplane speeds. It has proven to be exactly that. It was designed

and built under Air Force surveyance and in accordance with the detailed specifications approved by the United States Air Force. It complied with those specifications. After over twenty (20) years of service experience, Lockheed is aware of no dangers in the design of the aircraft which were not known by the United States Air Force at the time it approved the design or which did not become known to the United States Air Force during its operation of the aircraft. Lockheed is proud of the C-5A Galaxy and is service to this country.

Further, Affiant sayeth not."

/s/ O. V. Braun
O. V. BRAUN

Title: Manager of Military, Contracts, RET.

SWORN and SUBSCRIBED to before me on this the 20th day of October, 1993 by O. V. BRAUN.

/s/ Wynette Cheek
Notary Public in and for
Fulton County, Georgia
My Commission expires:
Nov. 14, 1994

APPENDIX 4

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
SAN ANTONIO DIVISION

IN RE AIR DISASTER AT RAMSTEIN	MDL DOCKET
AIR BASE, GERMANY, ON	No. 5-92-MD-919
AUGUST 29, 1990	ALL CASES

AFFIDAVIT

THE STATE OF GEORGIA §
COUNTY OF COBB §

"I am Carl H. Weaver. I am over the age of eighteen (18) and fully competent to make this Affidavit. The facts set forth herein are true and of my personal knowledge.

Lockhead Aeronautical Systems Company (LASC) formerly known as Lockheed-Georgia Company, is a division of Lockheed Corporation. Its principal offices and manufacturing facilities are in Marietta, Georgia.

LASC manufactures aircraft in Marietta, Georgia for the United States Government, foreign governments and commercial companies. These aircraft include the C-130 Hercules, the P-3 Orion, and the F-22, the United States' newest jet fighter.

LASC employs approximately 12,400 people in Marietta and has been in continual operation there, either as LASC or a predecessor, since 1951.

The C-5A Galaxy and C-5B Galaxy aircraft were designed and manufactured by Lockheed-Georgia/LASC

at Marietta, Georgia. All C-5As and C-5Bs were sold to the United States Air Force. The Air Force Plant Representative Office (AFPRO) inspected and accepted delivery of all C-5 Galaxies in Marietta, Georgia.

The "Rollout" of the first C-5A Galaxy took place on March 2, 1968 at the Lockheed plant in Marietta, Georgia. The first flight took place there in 1968. The last C-5B Galaxy was delivered to the Air Force in 1989. Engineering support and some heavy maintenance of the C-5A and C-5B fleet is provided under contract to the United States Air Force by Lockheed through Lockheed's C-5 Program Director whose office is in Marietta, Georgia.

The C-5A Galaxy which was involved in the accident near Ramstein Air Base, Germany on August 28, 1990 was identified as LAC0031 (Lockheed Serial Number) and United States Air Force Serial Number AF68-0228. That aircraft was designed and manufactured by Lockheed Georgia/LASC, under contract with the United States Air Force, in Marietta, Georgia. It was delivered to the Air Force on January 9, 1971 in Marietta, Georgia.

In 1978 and 1979, LASC designed and manufactured, at the request of the United States Air Force, kits which were used to modify the pylons of C-5A Galaxies. Aircraft AF68-0228 had been modified with the installation of that kit prior to the accident. Among other pylon modifications the kits included wiring harnesses and grounding bus bars for the pylon electrical system which, in turn, included the electrical wiring and grounding studs for the thrust reversers and cockpit indicator lights for the thrust reverse system. These kits were also designed and manufactured in Marietta, Georgia.

Further, Affiant sayeth not."

/s/ Carl E. Weaver
(Signature)

Carl E. Weaver
(Name Typed or Printed)

SWORN AND SUBSCRIBED to before me on this 10 day of March, 1993 by Carl H. Weaver.

/s/ Janie G. Bendock
Notary Public in and for Georgia
My Commission expires: 4-11-95